REMARKS

In the Office Action dated October 8, 2004 claims 11-18, 20- 28 and 30 are pending and all claims are rejected. The rejection is made final. Reconsideration is requested for at least the reasons discussed hereinbelow.

Applicants appreciate the courteous interview granted by Examiner Ross to their attorney on December 16, 2004. During the interview, the prior art reference, Williams U. S. Patent 2,621,548, was discussed along with the present invention, particularly claim 11. The substance of the remarks made during the interview are included in the discussion below.

The above amendment is made to more particularly point out and distinctly claim the subject matter regarded as invention.

Claims 11-30 are rejected under 35 U.S.C. 112, second paragraph. The examiner contends that the term "cutter blade" is not clear. Applicants strongly disagree. Applicants respectfully submit that the term "cutter blade" is known in this art to include blades that do not have traditional cutting edges and that those skilled in this art would readily understand the present invention from the specification and drawings. Nevertheless, to facilitate prosecution, Applicants have amended the claims to eliminate that term as unnecessary to the claim.

Claims 11-15, 18, 21-15 and 28 are rejected under 35 U.S.C. §103(a) over Williams (U.S. 2,621,548). Williams is directed to a mounting for cutting tools. The cutting tools of Williams are conventional tools having a conventional cutting edge as the working edge of the tool. To the contrary, the tools of the present invention have a working edge that is a non-cutting edge. Instead of the conventional cutting edge having an acute angle to cut into the work surface, the working edge of the tools of the present invention form substantially a right angle with the face of the tool blade and the tool knocks particles of sand from the sand mold to shape the mold surface.

During the interview, the Examiner contended that the claims as presented previously included the Williams tool because the side edge is a non-cutting edge. However, it was pointed out to the Examiner that, in the Williams tool, the working edge is a conventional cutting edge and, in the present, invention the working edge is a non-cutting edge.

The above amendment to the claims clearly sets forth that the non-cutting edge is in the direction of feed motion parallel to the axle of the shank. Thus, the present invention claims

> [a] shank-end tool for the use for milling-type machining of chipless materials for the manufacture of molds in the sand casting industry, especially heat-resistant foundry sand casting molds for producing metal castings, said tool comprising:
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> a shank portion having a longitudinal axis, a first end that can be connected detachably to a drive device and a second end with a groove-shaped recess extending in the longitudinal direction; and

a blade as an insert tool in the form of a flat bar having a thickness from 0.1 mm to 5.00 mm in said groove and fixedly attached to the shank, said blade having a flat leading face in a direction of advance during use, wherein the blade in the form of a flat bar has a leading blade edge with at least a portion of the leading edge substantially parallel to said longitudinal axis and the flat bar is provided without cutting edges on the leading face,

wherein the blade is a flat blank of a material selected from the group consisting of steel, wear-resistant steel, or a wear-resistant material, and wherein said leading blade edge is at a right angle to the flat leading face.

The leading blade edge is well known to those skilled in the art as the working edge of the tool. The side edges of the Williams blade are not leading edges. If the Examiner considers that further clarification is required, Applicants request that the Examiner call their attorney to make the clarification.

Thus, it is not seen how the present invention would have been obvious to one of ordinary skill in the art in view of Williams.

Claims 16 and 26 are rejected under 35 U.S.C. §103(a) over Williams in view of Schweikert et al. Williams is discussed in detail above. Schweikert et al do not make up for the deficiencies of Williams. Schweikert et al also ***fail*** to teach or suggest that the working edge of the tool be a non-cutting edge.

Claims 17 and 27 are rejected under 35 U.S.C. §103(a) over Williams in view of Ogawa.

Williams is discussed in detail above. Ogawa do not make up for the deficiencies of Williams. Ogawa also ***fails*** to teach or suggest that the working edge of the tool be a non-cutting edge.

Claims 20 and 30 are rejected under 35 U.S.C. §103(a) over Williams in view of Freitag. Williams is discussed in detail above. Freitag do not make up for the deficiencies of Williams. Freitag also ***fails*** to teach or suggest that the working edge of the tool be a non-cutting edge.

Thus, it is not seen how the present invention would have been obvious to one of ordinary skill in the art in view of any combination of the cited art.

Prior to the present invention, tools with cutting edges were used to machine sand molds. To provide wear resistance such prior art tools with cutting edges were provided with a diamond coating or similar hard material on the cutting edge. Such prior art CNC end mills for high speed cutting are illustrated in Attachment 3.

The present invention provides a simple tool for machining the sand molds that avoids the high cost tools having cutting edges coated with diamond. The tool is implemented as a flat sheet having any suitable thickness, preferably 0.3 to 3 mm, more preferably 1 mm or less. Because it has no cutting edges, it cab easily stamped from metal sheet of roll stock. Thus, the cutting blade is a flat sheet without a cutting edge. The edge of the cutting blade is substantially a right angle, which is not a cutting edge.

Thus, the present invention of Hauschild provides a simple and economical tool.

Applicants also wish to point out to the examiner that the tool of the present invention is classified different from the cited art. For example, Williams describes a drill or countersink tool. Such tools are classified as follows:

B23B	TURNING; BORING	Drehen, Bohren	US to IPC7 Concordance
B23B 27/00	Tools for turning or boring machines and for drilling machines (B23B51/00)	Werkzeuge für Dreh- oder Aufbohrmaschinen (für Bohrmaschinen B23B51/00);	
B23B51	Tools for drilling machines		
B23B51/00	Spade drills, Centerdrills;	Drillbohrer Spitzbohrer	199 200 207/225 226
B23B51/02	Twist drills	Spiralbohrer	
B23B51/10	Bits for countersinking	Senker und Entgrater	81 /83
B23C	MILLING	Fräsen	407
B23C 5/10	Shank-type cutters	Schaftfräser	407/34

US Class 407 Cutting tools for shaping (as distinguished from subdividing) generally to be used in a "milling, gear cutting, or planing" machine or in a lathe, will be found in this class unless specifically provided for in another class.

25 Milling with radial faced tool:

This subclass is indented under subclass 10. Apparatus or method for formation of an intermeshable element by use of a cutting tool adapted to rotate about an axis, the cutting tool including a planar surface normal to and extending across that axis from which surface extends a protrusion having a sharp cutting edge wherein the cutting tool is unsupported from the end having the planar surface and is supported for rotation from the opposite axial end.

US Class 407/34 Face or end mill:

This subclass is indented under subclass 33. Device comprising a cutter having an axially extending, unsupported end adapted to move forwardly into the work along the cutter axis **or transversely of the cutter axis** such that the unsupported end of the cutter extends through the undisturbed portion of the work.

A drill (of Williams) can never be worked crosswise (transversely) to the drill axle.

In view of the amendment and discussion above, it is respectfully submitted that the present application is in condition for allowance. An early reconsideration and notice of allowance are earnestly solicited.

If for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, the Commissioner is hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,

Date: February 28, 2005 By: _____

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